On the MORTALITY of EURASIANS. By P. M. TAIT, ESQ., F.S.S.,
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[Read before the Statistical Society, 17th May, 1864.]

THE principal facts brought under notice in the present paper were
embodied in an article in No. LXI of the "Calcutta Review." As
that publication is not generally read in this country, I have been
induced, at the suggestion of several members of the Society, to
introduce the subject upon this occasion, in the belief that any con-
tribution to Indian vital statistics, however humble, will not prove
altogether uninteresting to the members of this Society.

In a paper read before the Institute of Actuaries, in December,
1862, and published in the April 1863 number of the "Assurance
"Magazine," Mr. Samuel Brown, partly quoting from an article in
the "Calcutta Review" for March, 1853, notices, in a very able and
comprehensive résumé, all the papers on European mortality in
India which had appeared up to that time, including, of course, the
reports by Mr. Davies, Mr. Neison, and others, on the Civil and
Military Funds. The mortality amongst the members of the civil
and military services of India, has now indeed been determined with
the greatest precision; but up to the period embraced in the data
now submitted, no attempt, so far as I am aware, has been made to
ascertain the mortality which occurs amongst the mixed races
resident in India.

It is true that Mr. Davies, in 1842, formed a table for the pur-
poses of the Uncovenanted Service Fund, from Dodwell and Miles'
"List of Bengal Civil Servants;" but the lists afforded no means of
separating Europeans from Eurasians, nor can the mortality amongst
Bengal covenanted servants be considered as likely to represent that
which may be expected to obtain among the mixed class, from which
the ranks of the uncovenanted service are recruited.

In 1857, while holding the post of Secretary of a life insurance
company in Calcutta, I was—while pursuing a separate inquiry—
induced to examine incidentally the records of the Uncovenanted
Service Family Pension Fund of Bengal, with the view of ascertain-
ing the mortality amongst the members of that fund, more especially
the Eurasian members.

And here it will be necessary, for the benefit of my non-Indian

hearers, to endeavour to arrive at clear ideas of the exact signification of the word "Eurasian."

Turning over the pages of the "Calcutta Directory" for 1863, there appears to be at the first glance, amongst the names of the Christian inhabitants, a very plentiful admixture of names indicating Portuguese origin. Thus we find under the letter D—

> De Rago,
> De Rozario,
> De Santo,
> De Silva,
> De Souza, &c.

In the "Bombay Directory" for 1864, the De Souzas are in extraordinary force, almost rivalling in numbers, proportionally, the Smiths and Robinsons of our own directories. Thus we have also,

> De Cruz,
> De Gama,
> De Mello,
> De Mendoza,
> De Miranda, &c.;

and so with the "Madras Directory," but not to so great an extent.* As an illustration of the elements which compose Christian society in India, I find that during 10½ months, ending June, 1852, of 282 persons who presented themselves for insurance in Calcutta, there were born in—

England and Wales	88
Scotland	22
Ireland	16
India	126
Other places	21
Not known	9
Total	282

Thus nearly one-half of the applicants were born in India, and of that proportion, no doubt a very considerable number, possibly about one-third or one-half, were Eurasians. I mention these particulars only in illustration of the fact, that in Christian society in India there is a very considerable admixture of East Indians, but the exact proportion there are no means of ascertaining. Thus at Madras there is an "East Indian Association," the business of which

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* It has been observed, that in India among the English, the number of Portuguese terms in daily use is remarkable. Thus the grounds attached to a house are its "compound," *campinho;* a wardrobe is called an "almirah," *almarinho;* a tradesman is shown a "muster," *mostra,* a pattern. The word "caste," is supposed to be from the Spanish and Portuguese "*casta,*" meaning race or lineage.

is stated to be " to watch over the interests of the East Indian
" community, and to adopt such measures as may be most conducive
" to their interests." At Bombay there is an " Indo-British Insti-
" tution," purely for charitable purposes. At Calcutta, and indeed
generally over India, these mixed races are by Europeans conver-
sationally termed, East Indians, Eurasians, Indo - Britons, Indo-
Portuguese, Country-born, Half-castes, &c.

There can be little doubt that a considerable proportion of the
Eurasian population of India are the descendants, by native women,
of the Portuguese who settled on the west coast of India about the
beginning of the sixteenth century. There are at the present time
very few pure Portuguese in India. Possibly at Goa, once the
splendid and populous capital of the Portuguese dominions in the
east, there may be still amongst the highest classes a few pure
Portuguese families, but the great majority are Indo-Portuguese.*

It will be in the recollection of my hearers, that fully a century
before the English appeared in India, the Portuguese had established
military settlements at Goa, Bombay, and other places on the Mala-
bar coast. The famous Vasco de Gama, an enterprising Portuguese
admiral, discovered the south-east passage to India in 1497. A few
years later, in 1508, the celebrated Albuquerque besieged and finally
captured Goa from the Mohammedans, fortified it, and made it the
capital of the Portuguese dominions in the east.† The flag of Por-
tugal, now seldom seen in those waters, was once entirely dominant.
That nation enjoyed without a rival the monopoly of the power for
fully a century, maintaining an exclusive claim to the passage round
the Cape, and exploring the Indian seas as far as Japan.‡ It is
stated that " they had a considerable army in India, but never
" possessed any large territory, and may be said to have pillaged the
" country rather than conquered it." In 1518 Portuguese power
had attained a climax in India, since which it has declined, and has
long ago become extinct, the small settlement at Goa being the only
remnant remaining.

In 1594 the Dutch dispatched four ships to India, and a san-
guinary war between the Portuguese and that nation soon followed.§
The Dutch at Chinsurah and other factories, appear to have largely
cultivated social intercourse with Malay families settled at their
establishments, the result being a description of women called
" Mosses," who were, about the beginning of the present century,
in high estimation for their beauty and talents.||

* " Hamilton's Gazetteer of India," art. Goa.
† " Thornton's Gazetteer of India," art. India.
‡ " Mills's History of British India."
§ " Thornton's Gazetteer of India," art. India.
|| " Calcutta Review," September, 1860.

During the progress of the first Burmese war, the King of the Netherlands ceded to England all the Dutch possessions on the Indian continent.

The first appearance of the French in India was about the end of the sixteenth century, a company which had been formed in Brittany having sent out two ships. After repeatedly failing to establish factories, they at a later period succeeded in carrying by assault a small seaport contiguous to Madras, called St. Thomé, which they held only two years, but from the wreck of which they founded their famous settlement of Pondicherry, where a small district was ceded to them by one of the native princes. Pondicherry remains to this day the capital of the French possessions in India and seat of their supreme Government. In illustration of the extent of French dominion in India at the present time, I may mention that the Governor at Pondicherry is said to be paid at the rate of 100 rupees or 10l. a-month. Chandernagore, near Calcutta, is also a French settlement, but I believe that a few policemen there are quite equal to all the exigencies of the Government.

On the last day of the year 1600, "The Governor and Company " of Merchants trading to the East Indies " were constituted, under charter from Queen Elizabeth, a body politic and corporate, with power to trade to all places beyond the Cape of Good Hope and Straits of Magellan, for fifteen years. At first the early voyages of the company were confined to the islands of the Indian Ocean; but on the renewal of the charter by James I, they proceeded to establish a commercial intercourse with the Asiatic continent, and in 1612 permission was given by Jehangir to establish an English factory at Surat.*

Thus was laid the foundation of that mighty British-Indian empire, of which it is impossible to speak without a certain amount of wonder and enthusiasm, and which,—originating in the possession of a few acres of land held under ignoble conditions by the servants of a trading company, the representatives of a nation, until the appearance of Clive, deemed by the haughty viziers of the Great Mogul to consist of mere pedlars and traders, incapable of any great enterprise,—now extends from Cape Comorin to the snows of the Himalayas, comprising twenty-one different nations, speaking as many different languages, and numbering no less than 185 millions of human beings, subject to British rule and influence.

In addition to the European nations mentioned above, India has also been colonized by the following among other peoples, given in the order of their supposed arrival :—Jews, Syrian Christians, Arabs, Armenians, Persians, Affghans, Tartars, Turks, Abyssinians, Danes,

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* "Thornton's Gazetteer of India," art. India.

Chinese, and Americans.* There is a small settlement of Danes at Serampore, in the immediate neighbourhood of Calcutta.

In the absence of any reliable statistics on the subject, I believe I am correct in stating that the great majority of Eurasians in India are Indo-European, and of these perhaps there is about an equal number of Indo-Portuguese and Indo-British.

The word "Eurasian," then, is used strictly in a conventional and not an ethnological sense, and has reference, generally, to Christians of colour in India of mixed European and Asiatic parentage, or the descendants of such.

It is a mistake which I notice has been fallen into on several occasions, to imagine that East Indians are one homogeneous race or nation possessed of certain distinguishing and immutable qualities, and wanting in certain other qualities. The class, in respect to inherent qualities, is essentially heterogeneous. Thus, the descendants of the followers of Albuquerque and their Malay mistresses, and the offspring of an Anglo-Bengal civilian and a Hindoo woman, would alike be termed East Indians. A person with one-half Celtic and one-half Hindoo blood in his veins, or with nine-tenths Hindoo and one-tenth Portuguese, or the converse, would in India be called an East Indian. There is no attempt to discriminate the degrees of difference, but the term, in point of fact, is applied generally to all Christians of colour who affect the dress and manners of Europeans.

Until within the last few years great prejudices existed both amongst Europeans and natives in India against East Indians. There is a very interesting article in a recent number of the "Calcutta Review," entitled "Calcutta in the Olden Time," from which we learn the estimation in which they were held fifty years ago. By the natives they were opprobriously styled *chichi, mutia Feringee, i.e., mud* Englishman, &c., and the author of "Sketches "of India in 1811," declared them to be "characterised by all the "vices and gross prejudices of the natives, and by all the faults and "failings of the European character, without its candour, sincerity, "or probity; a heterogeneous set, some by Hindoo, others by "Mohammedan and Malay mothers, as wills the caprice of the "fathers."

It is amusing to find that the governing class in India, in those days, entertained serious apprehensions that the East Indians would mutiny and join the natives. They were not allowed to hold office under the East India Company, and their admission to all offices of authority was opposed on the ground that "their admission could "not fail to lessen that respect and deference which ought most "studiously to be exacted on every occasion from the natives."

* "McCulloch's Geographical Dictionary," art. Hindostan.

There can be no doubt that great discredit was in those days often thrown on East Indians by the system of proselytism then existing amongst the Portuguese priests. "For the dregs of the " Mussulmans and Hindoos, employed in the meanest and vilest " offices," says one writer, "for the most abandoned criminals and " all those indeed who are utter outcasts from their own race and " religion, there is one resource, and that is, to turn Christian. The " Portuguese priests receive all, baptise and give them absolution, " and as soon as they are made Christians, they call themselves and " are called Portuguese, affecting the dress and manners of Euro- " peans."

Of recent years the prejudices against Eurasians have to a great extent passed away ; and many experienced Indian authorities speak highly of them. Their loyalty has latterly never been questioned, and the subordinate offices of the local Government of India are recruited mainly from their ranks. Very satisfactory evidence was given in their favour before the " Select Colonization and Settlement " (India) Committee," in 1859. Thus Mr. Saunders, Mr. Forbes, Colonel Turner, Dr. Ralph Moore, and others, speak favourably as to their intelligence and probity. Dr. Moore, a resident in India for forty years, while admitting that they are not equal to pure Europeans in physical stamina, more especially those of them employed in sedentary pursuits, declares that he has found them sober and industrious, that they make capital soldiers, instancing the names of Skinner and Van Cortland, and have even produced several excellent judges. Colonel Everest, a name well known in the scientific world, is stated to have had many Eurasians in his employment, and to have spoken of them in the highest terms.

Personally, during an eleven years' residence in India, I have not come much in contact with East Indians, and, besides, the class is altogether so heterogeneous that it is impossible, with any justice or accuracy, to characterise it in a general way. I have had several of them in my office, who made excellent accountants and computers, but certainly not superior in that respect to the Hindoos. The dregs in the presidency towns of India are a peculiarly low and degraded class. On the other hand, those holding the higher posts in governmental and merchants' offices in Calcutta and elsewhere, are much esteemed for their business qualities. The great misfortune of the vast majority of East Indians is, that they have never had the advantages of a decent education, such as is available in this country. With proper training and education, I see no reason why they should not, for all practical business purposes, be quite equal to Europeans.

It is pleasant, from this region of doubt, uncertainty, and vague

generalisation, to turn to the purely statistical portion of our subject.

The records of the Uncovenanted Service Family Pension Fund, which were kindly placed at my disposal by Mr. Kellner, furnish the following particulars with reference to 945 persons who became subscribers to the fund during the twenty years ending 30th April, 1857, viz., the date of entry, together with the age at entry, and the age at death, resignation, or dismissal; the age at entry verified by baptismal or other certificate; and the age at death or discontinuance being in all cases computed to the nearest birthday. Europeans and East Indians were distinguished in the list, and the following table exhibits the proportion of each class subscribing to the fund:—

ABSTRACT A.—*Classification of Subscribers.*

Class.	Number.	Percentage of Whole Number.
East Indians	693	73·333
Europeans	244	25·820
Unknown	8	·847
Total	945	100·000

It should be understood that these are 945 *lives*, not entries—a necessary distinction; for there are members of the fund who have been struck off, and subsequently readmitted more than once. In such cases only the first entry and discontinuance are noted, in order that the list may have reference to lives only.

The following table, then, exhibits the principal elementary facts from which to determine the rate of mortality amongst the members of the Uncovenanted Fund. In the explanation of the table, we have adopted very nearly, the phraseology employed by Mr. Neison on similar occasions :—

a. Represents the age.

b. The number of subscribers entering at each age.

c. The number of subscribers remaining under observation from each preceding age. Thus, two entered at age 19, and not coming under any of the contingencies contemplated in the succeeding columns, are re-entered as under observation at age 20, when other two subscribers entered, there being then four under observation in all, out of whom one with-

drew, and the remaining three are entered in this column opposite age 21.

d. The total number of subscribers under observation at each age. Thus, there were three subscribers remaining under observation from the preceding age at age 21, which, added to the nine entering at that age, makes twelve in all, of whom two are alive at 30th April, 1857, and therefore no longer under notice, leaving ten to be carried forward to column *c*, opposite age 22.

e. The number dying at each age.

f. Those who withdraw from the fund.

g. Those who are struck off.

h. The total of *f* and *g*.

m. The number of subscribers alive at 30th April, 1857, and who have not withdrawn or been struck off.

n. The total of columns *e*, *h*, and *m*, or the number who pass from observation at any age.

o. One-half the numbers in column *b*.

p. One-half of the numbers in column *h*.

q. Total of *o* and *p*.

r. The number exposed to one entire year's risk of mortality; and is obtained for each age by deducting the number in column *q* from the number in column *d* opposite the age. As subscribers enter at various periods throughout the year, the persons represented by the numbers in column *b* are, one with another, not subject to more than six months' risk, or, which is the same thing, one-half of them to a year's risk. And as subscribers discontinue at various periods throughout the year, they are, one with another, subject to only six months' risk in that year, or one-half of them to a whole year's risk. Hence one-half of the number entered, and one-half of the number discontinued, have to be deducted from the gross number under observation, as exhibited in column *d*; the residue in column *r* being the number exposed to a complete year's risk.

ABSTRACT B.

a	b	c	d	e	f	g	h
					From 1st May, 1837,		
Ages.	Number Entered at Each Age.	Number Remaining under Observation from Preceding Age.	Total Number under Observation at Each Age.	Died.	Discontinued.		
					Withdrawn.	Struck Off.	Total.
19............	2	—	2	—	—	—	—
20............	2	2	4	—	1	—	1
21............	9	3	12	—	—	—	—
22............	22	10	32	—	1	1	2
23............	15	27	42	—	1	2	3
24............	29	37	66	—	—	4	4
25............	36	60	96	—	2	2	4
26............	47	87	134	—	—	3	3
27............	36	117	153	2	6	3	9
28............	47	123	170	1	6	2	8
29............	48	150	198	6	2	4	6
30............	48	174	222	3	2	6	8
31............	48	192	240	1	1	5	6
32............	55	221	276	2	3	4	7
33............	48	242	290	2	4	3	7
34............	49	261	310	5	8	5	13
35	34	265	299	7	7	5	12
36............	37	265	302	4	1	4	5
37............	31	264	295	4	1	10	11
38	39	255	294	4	5	5	10
39............	26	248	274	7	4	2	6
40............	30	235	265	6	3	3	6
41............	18	227	245	6	3	6	9
42............	20	209	229	12	4	4	8
43......... ..	19	185	204	3	2	5	7
44............	21	178	199	6	3	1	4
45	19	167	186	8	2	2	4
46............	15	156	171	5	1	2	3
47............	15	140	155	4	2	3	5
48............	7	132	139	3	3	1	4
49............	10	123	133	6	1	2	3
50............	11	111	122	1	—	1	1
51............	8	99	107	8	—	1	1
52............	8	92	100	6	6	1	7
53............	4	78	82	3	2	—	2
54	7	74	81	5	—	—	—
55............	7	68	75	2	—	4	4
56............	2	60	62	1	2	—	2
57............	5	52	57	3	—	—	—
58............	4	47	51	1	2	—	2
59............	1	39	40	1	—	—	—
60............	1	36	37	1	—	—	—

ABSTRACT B.

m	n	o	p	q	r	a
to 30th April, 1857.						
Alive at 30th April, 1857.	Total Gone Off.	Half of Discontinued and Half of Entered.			Number Exposed to Risk.	Ages.
		Entered.	Discontinued.	Total.		
—	—	1	—	1	1	19
—	1	1	·5	1·5	2·5	20
2	2	4·5	—	4·5	7·5	21
3	5	11	1	12	20	22
2	5	7·5	1·5	9	33	23
2	6	14·5	2	16·5	49·5	24
5	9	18	2	20	76	25
14	17	23·5	1·5	25	109	26
19	30	18	4·5	22·5	130·5	27
11	20	23·5	4	27·5	142·5	28
12	24	24	3	27	171	29
19	30	24	4	28	194	30
12	19	24	3	27	213	31
25	34	27·5	3·5	31	245	32
20	29	24	3·5	27·5	262·5	33
27	45	24·5	6·5	31	279	34
15	34	17	6	23	276	35
29	38	18·5	2·5	21	281	36
25	40	15·5	5·5	21	274	37
32	46	19·5	5	24·5	269·5	38
26	39	13	3	16	258	39
26	38	15	3	18	247	40
21	36	9	4·5	13·5	231·5	41
24	44	10	4	14	215	42
16	26	9·5	3·5	13	191	43
22	32	10·5	2	12·5	186·5	44
18	30	9·5	2	11·5	174·5	45
23	31	7·5	1·5	9	162	46
14	23	7·5	2·5	10	145	47
9	16	3·5	2	5·5	133·5	48
13	22	5	1·5	6·5	126·5	49
21	23	5·5	·5	6	116	50
6	15	4	·5	4·5	102·5	51
9	22	4	3·5	7·5	92·5	52
3	8	2	1	3	79	53
8	13	3·5	—	3·5	77·5	54
9	15	3·5	2	5·5	69·5	55
7	10	1	1	2	60	56
7	10	2·5	—	2·5	54·5	57
9	12	2	1	3	48	58
3	4	·5	—	·5	39·5	59
5	6	·5	—	·5	36·5	60

ABSTRACT B—*Contd.*

a	b	c	d	e	f	g	h
							From 1st May, 1837,
Ages.	Number Entered at Each Age.	Number Remaining under Observation from Preceding Age.	Total Number under Observation at Each Age.	Died.	Discontinued.		
					Withdrawn.	Struck Off.	Total.
61............	1	31	32	5	—	—	—
62	—	25	25	1	1	—	1
63............	—	22	22	3	—	—	—
64............	2	19	21	3	—	—	—
65............	1	17	18	3	—	—	—
66............	1	13	14	—	—	—	—
67...	—	12	12	2	—	—	—
68............	—	10	10	—	—	—	—
69............	—	10	10	—	2	—	2
70............	—	8	8	3	—	—	—
71............	—	4	4	2	—	—	—
72	—	2	2	1	—	—	—
73............	—	1	1	—	—	—	—
74............	—	1	1	—	—	—	—
75............	—	1	1	—	—	—	—
76............	—	1	1	—	—.	—	—
77............	—	1	1	—	—	—	—
78............	—	1	1	—	—	—	—
79............	—	1	1	1	—	—	—
	945	5,691	6,636	163	94	106	200

The following is an abstract of the particulars in the preceding table :—

ABSTRACT C.

Ages.	Number Exposed to the Risk of Mortality.	Died.	Mortality per Cent.
21–25	186·0	—	—
26–30	747·0	12	1·6064
31–35	1275·5	17	1·3328
36–40	1329·5	25	1·8804
41–45	998·5	35	3·5053
46–50	683·0	19	2·7818
51–55	421·0	24	5·7007
56–60	238·5	7	2·9350
61–65	115·5	15	12·9872
66–70	52·5	5	9·5238
71–75	9·0	3	33·3333
76–79	4·0	1	25·0000
Total	6060·0	163	2·6898

ABSTRACT B—*Contd.*

| m | n | o | p | q | r | a |

to 30th April, 1857.

Alive at 30th April, 1857.	Total Gone Off.	Half of Discontinued and Half of Entered.			Number Exposed to Risk.	Ages.
		Entered.	Discontinued.	Total.		
2	7	·5	—	·5	31·5	61
1	3	—	·5	·5	24·5	62
—	3	—	—	—	22	63
1	4	1	—	1	20	64
2	5	·5	—	·5	17·5	65
2	2	·5	—	·5	13·5	66
—	2	—	—	—	12	67
—	—	—	—	—	10	68
—	2	—	1	1	9	69
1	4	—	—	—	8	70
—	2	—	—	—	4	71
—	1	—	—	—	2	72
—	—	—	—	—	1	73
—	—	—	—	—	1	74
—	—	—	—	—	1	75
—	—	—	—	—	1	76
—	—	—	—	—	1	77
—	—	—	—	—	1	78
—	1	—	—	—	1	79
582	945	472·5	100·0	572·5	6,063·5	

It thus appears that during 6,060 years of risk to which the members have been exposed, 163 died, the mortality being 2·6898 per cent.

The following table exhibits the particulars necessary to determine the mortality amongst East Indian subscribers to the fund, the explanation of the different columns being the same as that applicable to Abstract B.

ABSTRACT D.

a	b	c	d	e	f	g	h

					From 1st May, 1837,		
Ages.	Number Entered at Each Age.	Number Remaining under Observation from Preceding Age.	Total Number under Observation at Each Age.	Died.	Discontinued.		
					Withdrawn.	Struck Off.	Total.
19............	2	—	2	—	—	—	—
20............	2	2	4	—	1	—	1
21............	9	3	12	—	—	—	—
22............	19	10	29	—	1	1	2
23............	14	25	39	—	1	2	3
24	28	35	63	—	—	4	4
25............	29	57	86	—	1	2	3
26	40	79	119	—	—	2	2
27............	25	104	129	1	5	3	8
28	36	104	140	—	4	2	6
29	37	123	160	5	2	4	6
30............	38	139	177	1	—	4	4
31	37	155	192	1	—	3	3
32	49	177	226	2	2	4	6
33	35	197	232	—	3	3	6
34	33	210	243	4	5	5	10
35............	21	210	231	6	7	3	10
36	25	202	227	3	1	2	3
37	22	202	224	3	—	6	6
38............	27	198	225	3	4	4	8
39............	19	194	213	5	1	1	2
40............	18	184	202	5	2	3	5
41	15	173	188	5	3	5	8
42............	14	159	173	10	3	1	4
43............	12	140	152	1	2	3	5
44	9	136	145	5	2	1	3
45............	13	121	134	7	1	2	3
46	5	112	117	4	1	2	3
47	11	90	101	2	1	2	3
48............	4	87	91	2	2	1	3
49............	7	77	84	2	1	2	3
50............	7	72	79	1	—	1	1
51............	6	64	70	3	—	—	—
52	4	64	68	6	4	—	4
53	3	53	56	2	1	—	1
54............	4	51	55	3	—	—	—
55............	2	46	48	2	—	3	3
56	1	36	37	1	1	—	1
57	5	29	34	2	—	—	—
58	4	30	34	1	2	—	2
59............	—	26	26	—	—	—	—
60............	—	23	23	—	—	—	—

ABSTRACT D.

m	n	o	p	q	r	a
to 30th April, 1837.						
Alive at 30th April, 1857.	Total Gone Off.	Half of Discontinued and Half of Entered.			Number Exposed to Risk.	Ages.
		Entered.	Discontinued.	Total.		
—	—	1	—	1	1	19
—	1	1	·5	1·5	2·5	20
2	2	4·5	—	4·5	7·5	21
2	4	9·5	1	10·5	18·5	22
1	4	7	1·5	8·5	30·5	23
2	6	14	2	16	47	24
4	7	14·5	1·5	16	70	25
13	15	20	1	21	98	26
16	25	12·5	4	16·5	112·5	27
11	17	18	3	21	119	28
10	21	18·5	3	21·5	138·5	29
17	22	19	2	21	156	30
11	15	18·5	1·5	20	172	31
21	29	24·5	3	27·5	198·5	32
16	22	17·5	3	20·5	211·5	33
19	33	16·5	5	21·5	221·5	34
13	29	10·5	5	15·5	215·5	35
19	25	12·5	1·5	14	213	36
17	26	11	3	14	210	37
20	31	13·5	4	17·5	207·5	38
22	29	9·5	1	10·5	202·5	39
19	29	9	2·5	11·5	190·5	40
16	29	7·5	4	11·5	176.5	41
19	33	7	2	9	164	42
10	16	6	2·5	8·5	143·5	43
16	24	4·5	1·5	6	139	44
12	22	6·5	1·5	8	126	45
20	27	2·5	1·5	4	113	46
9	14	5·5	1·5	7	94	47
9	14	2	1·5	3·5	87·5	48
7	12	3·5	1·5	5	79	49
13	15	3·5	·5	4	75	50
3	6	3	—	3	67	51
5	15	2	2	4	64	52
2	5	1·5	·5	2	54	53
6	9	2	—	2	53	54
7	12	1	1·5	2·5	45·5	55
6	8	·5	·5	1	36	56
2	4	2·5	—	2·5	31·5	57
5	8	2	1	3	31	58
3	3	—	—	—	26	59
3	3	—	—	—	23	60

ABSTRACT D.

a	b	c	d	e	f	g	h
					From 1st May, 1837,		
Ages.	Number Entered at Each Age.	Number Remaining under Observation from Preceding Age.	Total Number under Observation at Each Age.	Died.	Discontinued.		
					Withdrawn.	Struck Off.	Total.
61............	1	20	21	4	—	—	—
62............	—	16	16	—	—	—	—
63............	—	15	15	2	—	—	—
64	1	13	14	2	—	—	—
65............	—	11	11	1	—	—	—
66............	—	9	9	—	—	—	—
67............	—	8	8	2	—	—	—
68............	—	6	6	—	—	—	—
69............	—	6	6	—	1	—	1
70............	—	5	5	2	—	—	—
71............	—	2	2	1	—	—	—
72............	—	1	1	1	—	—	—
73	—	—	—	—	—	—	—
74	—	—	—	—	—	—	—
75	—	—	—	—	—	—	—
76	—	—	—	—	—	—	—
77............	—	—	—	—	—	—	—
78............	—	—	—	—	—	—	—
79............	—	—	—	—	—	—	—
	693	4,311	5,004	113	65	81	146

The following table is an abstract of the results of the preceding one :—

ABSTRACT E.

Ages.	Number Exposed to the Risk of Mortality.	Died.	Mortality per Cent.
21–25 ....,....	173·5	—	—
26–30	624·0	7	1·1218
31–35	1019·0	13	1·2758
36–40	1023·5	19	1·8564
41–45 ....,...	749·0	28	3·7383
46–50	448·5	11	2·4526
51–55	283·5	16	5·6437
56–60	147·5	4	2·7119
61–65	76·0	9	11·8421
66–70	33·5	4	11·9403
71–72	3·0	2	66·6667
Total	4581·0	113	2·4667

ABSTRACT D—*Contd.*

m	n	o	p	q	r	a

to 30th April, 1857.

Alive at 30th April, 1857.	Total Gone Off.	Half of Discontinued and Half of Entered.			Number Exposed to Risk.	Ages.
		Entered.	Discontinued.	Total.		
1	5	·5	—	·5	20·5	61
1	1	—	—	—	16	62
—	2	—	—	—	15	63
1	3	·5	—	·5	13·5	64
1	2	—	—	—	11	65
1	1	—	—	—	9	66
—	2	—	—	—	8	67
—	—	—	—	—	6	68
—	1	—	·5	·5	5·5	69
1	3	—	—	—	5	70
—	1	—	—	—	2	71
—	1	—	—	—	1	72
—	—	—	—	—	—	73
—	—	—	—	—	—	74
—	—	—	—	—	—	75
—	—	—	—	—	—	76
—	—	—	—	—	—	77
—	—	—	—	—	—	78
—	—	—	—	—	—	79
434	693	346·5	73·	419·5	4584·5	

It would appear, therefore, that during 4,581 years of risk to which the Eurasians subscribers were exposed, 113 died; the mortality being 2·4667 per cent.

These results are somewhat remarkable. Hitherto an apparently universal impression has prevailed that the rate of mortality amongst Eurasians is considerably in excess of that which obtains amongst Europeans resident in India, and some insurance offices decline insuring them at the rates of premium applicable to Europeans; but the facts set forth in the preceding tables, tend to prove that the respectable and provident portion of the Eurasian community are, at certain ages, subject to a less rate of mortality than that which prevails amongst any other class of Christians in India. At ages 21–25 there are only 173 lives under observation, and at ages 51–72, not more than 544, these numbers being too small to warrant any confidence in the results; but confining ourselves to the remaining 3,864 lives, which comprise 84 per cent. of the whole experience, the following is the result as compared with the casualties amongst

the members of the Covenanted Civil Service of Bengal, as given by Mr. Neison at p. 4 of his "Report on the Bengal Civil Fund," and founded on "A Register of the Honourable East India Company's "Civil Servants of the Bengal Establishment from 1790 to 1842, "&c., &c., compiled under the direction of the Hon. H. T. Prinsep, "late Member of Council of India, by Ramchunder Doss."

ABSTRACT F.

Ages.	East Indians, 1837-57.			Civil Service, 1790-1842.		
	Number Exposed to Risk.	Died.	Mortality per Cent.	Number Exposed to Risk.	Died.	Mortality per Cent.
26–30................	624·0	7	1·1218	4,010	84	2·094
31–35	1019·0	13	1·2758	3,177	48	1·511
36–40................	1023·5	19	1·8564	2,172	60	2·762
41–45	749·0	28	3·7383	1,496	44	2·941
46–50................	448·5	11	2·4526	818	29	3·545
26–50	3864·0	78	2·01863	11,673	265	2·2702

Thus at 26–40 inclusive, it would appear that 13·5 East Indians and 17·6 civilians out of every 1,000 die annually; and at 26–50 inclusive, 20 East Indians, and nearly 23 civilians.

The results are still in favour of East Indians, even if the comparison be made to apply to the deaths in the civil service during the more recent period, 1820-42, according to the list compiled by Ramchunder Doss, as will appear from the following table:—

ABSTRACT G.

Ages.	East Indians, 1837-57.			Civil Service, 1820-42.		
	Number Exposed to Risk.	Died.	Mortality per Cent.	Number Exposed to Risk.	Died.	Mortality per Cent.
26–30	624·0	7	1·1218	1,528	30	1·963
31–35................	1019·0	13	1·2758	975	10	1·026
36–40................	1023·5	19	1·8564	285	4	1·403
26–40................	2666·5	39	1·4626	2,788	44	1·5782

indicating a rate of mortality amounting to 1·4626 amongst East Indians, and of 1·5782 amongst the members of the Bengal Civil Service.

The Covenanted Civil Service has always hitherto been considered the most select class of lives in India. In the receipt of large

incomes, living in the best houses, with ample means to effect change
of climate whenever sickness renders it necessary, commanding
everything, in short, which reduces the risk of residence in that
country to the minimum, it is not to be wondered at that the mor-
tality amongst certain sections of the population of the British
islands—the adult male population of Glasgow, for instance *—is, at
ages 21–45, in excess of that prevailing in the Bengal Civil Service;
nor, for obvious reasons, should we be unprepared to learn, that the
casualties amongst Bengal civilians are considerably less than
amongst their humbler brethren of the uncovenanted service. The
contrary, however, appears to be the case; and as the mortality of
the humble provident classes in England is less than that of the
aristocracy,† so is the mortality amongst the provident East Indian
members of the Uncovenanted Fund less than that observed to pre-
vail amongst the governing class in India.

There is one consideration which must not be overlooked. It is
compulsory on members of the Bengal Civil Service, all of whom,
however, are approved by medical examiners in England before
appointment, to subscribe to the fund; in the case of the Uncove-
nanted Fund, it is not compulsory,—the directors strictly exercise
the right of selection under the rules of the fund. Thus every
applicant must undergo careful medical examination, and be pro-
nounced of sound constitution before admission. But will this
explain the low rate of mortality prevailing among East Indians, as
revealed by the above tables? We do not think so. Applicants for
assurance at healthy rates to life offices, both in India and in Eng-
land, are subjected to the strictest examination, the result being that
—so far as the experience of one office with which we are acquainted
goes—about $9\frac{1}{2}$ per cent. in India are rejected; but the mortality
amongst assured lives does not appear to be less on that account.
If any reliance is to be placed on Mr. Francis' paper, it is in India
considerably more, at certain ages, than is represented even by the
army casualties. The fact is, that no man will pay his money either
to a fund or a life office, unless he has a tolerably clear idea that the
arrangement is a better one for himself than putting it out at
interest. Those who have a very high opinion of their vitality, will
be apt to invest their savings elsewhere; while the chances are, that
the number of bad and indifferent lives offering, will counteract all
the advantages derivable from selection.

But although the results above given are, so far as the data will
admit, at certain ages decisive as affecting the East Indian members
of the Uncovenanted Fund, they cannot be received as applicable to
the East Indian community generally. There can be no doubt that

* Neison, " Report on Bengal Civil Fund," p. 12.
† Neison, " Vital Statistics," p. 157.

the payment monthly, for provident purposes, of a certain sum by persons in middle or inferior life, is indicative of more than average intelligence—of the existence of those temperate, careful, frugal habits which result in health and longevity. Thus, as the members of friendly societies in England enjoy, one with another, longer life than falls to the lot of the working classes generally, it is not unreasonable to conclude that East Indian subscribers to the fund are a very superior class to the mixed Eurasian population throughout India.

The following table exhibits the mortality among the whole body of subscribers and East Indian subscribers to the fund, placed in juxtaposition :—

ABSTRACT H.

Ages.	Mortality per Cent.	
	Mixed Class.	East Indians.
26–30	1·6064	1·1218
31–35	1·3328	1·2758
36–40	1·8804	1·8564
41–45	3·5053	3·7383
46–50	2·7818	2·4526
51–55	5·7007	5·6437
56–60	2·9350	2·7119

From the preceding tables it appears that while the mortality at ages from 21 to 60 inclusive, amongst the members of the fund generally, is 2·6898 per cent. per annum, the mortality amongst East Indian members is only 2·4667 per cent. per annum.

The following Table I* is formed from the data in Abstract B preceding, and represents the mortality for the mean of each quinquennial term of life among the subscribers to the Uncovenanted Fund. For an explanation of how it and the succeeding tables are constructed, see Mr. Neison's works.†

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* Tables I, II, IV, and V, indicating the processes by which the results in the Tables of Decrements, Nos. III and VI were obtained, are for brevity omitted; and not being considered essential to the argument.

† "Vital Statistics," pp. 117—119, 145—147. Paper on Master Mariners, *Journal of the Statistical Society*, vol. xiii, &c. Mr. Samuel Brown, in forming a table of mortality applicable to the Madras Military Fund, takes the logarithm of the mortality per cent. at the mean age for each decennial period, as the basis of the table, and obtains the logarithm for the intermediate ages, by even differences of logarithms set against each tenth age.—" Report on the Madras Military Fund," p. 51.

From the results in Table II, the following Table of Decrements is derived :—

III.—*Table of Decrements—Mixed Class.*

1	2	3	4	5
Age.	Mortality per Cent.$\} = (d).$ $1 - \frac{d}{100}.$	$\lambda \left(1 - \frac{d}{100}\right) = (c).$ $5 + \Sigma (c) = \lambda (l).$	Number Living $= (l).$	Number Dying.
25	1·606 ·98394	5·00000 9·99297	100,000	1,606
26	1·606 ·98394	4·99297 ·99297	98,394	1,580
27	1·606 ·98394	·98594 ·99297	96,814	1,554
28	1·606 ·98394	·97891 ·99297	95,260	1,530
29	1·486 ·98514	·97188 ·99350	93,730	1,392
30	1·398 ·98602	·96538 ·99389	92,338	1,290
31	1·344 ·98656	·95927 ·99412	91,048	1,225
32	1·322 ·98678	·95339 ·99422	89,823	1,187
33	1·333 ·98667	·94761 ·99417	88,636	1,182
34	1·356 ·98644	·94178 ·99407	87,454	1,186
35	1·423 ·98577	·93585 ·99378	86,268	1,227
36	1·532 ·98468	·92963 ·99330	85,041	1,302
37	1·685 ·98315	·92293 ·99262	83,739	1,410
38	1·880 ·98120	·91555 ·99176	82,329	1,548
39	2·393 ·97607	·90731 ·98948	80,781	1,833
40	2·812 ·97188	·89679 ·98761	78,848	2,218
41	3·137 ·96863	·88440 ·98616	76,630	2,403

III.—*Table of Decrements—Mixed Class—Contd.*

1	2	3	4	5
Age.	Mortality per Cent. $\}=(d)$. $1-\dfrac{d}{100}$.	$\lambda\left(1-\dfrac{d}{100}\right)=(c)$. $5+\Sigma(c)=\lambda(l)$.	Number Living $=(l)$.	Number Dying.
42	3·368 ·96632	4·87056 9·98512	74,227	2,500
43	3·505 ·96495	·85568 ·98450	71,727	2,515
44	3·069 ·96931	·84018 ·98646	69,212	2,125
45	2·779 ·97221	·82664 ·98776	67,087	1,854
46	2·634 ·97366	·81440 ·98841	65,223	1,718
47	2·635 ·97365	·80281 ·98840	63,505	1,673
48	2·782 ·97218	·79121 ·98775	61,832	1,720
49	3·820 ·96180	·77896 ·98308	60,112	2,297
50	4·632 ·95368	·76204 ·97940	57,815	2,678
51	2·954 ·97046	·74144 ·98698	55,137	1,629
52	3·044 ·96956	·72842 ·98657	53,508	1,629
53	3·140 ·96860	·71499 ·98614	51,879	1,630
54	3·241 ·96759	·70113 ·98569	50,249	1,628
55	3·350 ·96650	·68682 ·98520	48,621	1,629
56	3·466 ·96534	·67202 ·98468	46,992	1,629
57	3·590 ·96410	·65670 ·98412	45,363	1,629
58	3·724 ·96276	·64082 ·98352	43,734	1,628
59	3·868 ·96132	·62434 ·98287	42,106	1,629

III.—*Table of Decrements—Mixed Class—Contd.*

1	2	3	4	5
Age.	Mortality per Cent. $\}$ = (d). $1 - \frac{d}{100}$.	$\lambda \left(1 - \frac{d}{100}\right) = (c)$. $5 + \Sigma(c) = \lambda(l)$.	Number Living = (l).	Number Dying.
60	4·024 ·95976	4·60721 9·98216	40,477	1,629
61	4·192 ·95808	·58937 ·98140	38,848	1,629
62	4·322 ·95678	·57077 ·98081	37,219	1,608
63	4·518 ·95482	·55158 ·97992	35,611	1,609
64	4·673 ·95327	·53150 ·97922	34,002	1,589
65	4·902 ·95098	·51072 ·97817	32,413	1,589
66	5·155 ·94845	·48889 ·97701	30,824	1,589
67	5·435 ·94565	·46590 ·97573	29,235	1,589
68	5·747 ·94253	·44163 ·97430	27,646	1,589
69	6·098 ·93902	·41593 ·97267	26,057	1,589
70	6·494 ·93506	·38860 ·97084	24,468	1,589
71	6·944 ·93056	·35944 ·96874	22,879	1,589
72	7·463 ·92537	·32818 ·96632	21,290	1,588
73	8·065 ·91935	·29450 ·96348	19,702	1,589
74	8·772 ·91228	·25798 ·96013	18,113	1,589
75	9·615 ·90385	·21811 ·95610	16,524	1,589
76	10·239 ·89761	·17421 ·95309	14,935	1,529
77	10·815 ·89185	·12730 ·95029	13,406	1,450

III.—*Table of Decrements—Mixed Class—Contd.*

1	2	3	4	5
Age.	Mortality per Cent. $\Big\} = (d).$ $1 - \dfrac{d}{100}.$	$\lambda\left(1 - \dfrac{d}{100}\right) = (c).$ $5 + \Sigma\,(c) = \lambda\,(l).$	Number Living $= (l).$	Number Dying.
78	11·296 ·88704	4·07759 9·94794	11,956	1,351
79	12·172 ·87828	·02553 ·94363	10,605	1,290
80	13·433 ·86567	3·96916 ·93735	9,315	1,252
81	14·778 ·85222	·9065l ·93055	8,063	1,191
82	16·474 ·83526	·83706 ·92182	6,872	1,132
83	19·031 ·80969	·75888 ·90832	5,760	1,093
84	20·513 ·79487	·66720 ·90030	4,647	953
85	22·043 ·77957	·56750 ·89186	3,694	814
86	23·448 ·76552	·45936 ·88396	2,880	675
87	25·225 ·74775	·34332 ·87376	2,205	556
88	25·301 ·74699	·21708 ·87331	1,649	418
89	25·806 ·74194	·09039 ·87037	1,231	317
90	26·087 ·73913	2·96076 ·86872	914	239
91	29·412 ·70588	·82948 ·84873	675	198
92	33·334 ·66666	·67821 ·82390	477	159
93	43·750 ·56250	·50211 ·75012	318	139
94	55·556 ·44444	·25223 ·64781	179	100
95	75·000 ·25000	1·90004 9·39794	79	59
96	100·000	1·29798	20	—

From the results in Table IV, the following Table of Decrements is derived:—

VI.—*Table of Decrements—Eurasians.*

1 Age.	2 Mortality per Cent. $\} = (c)$. $1 - \frac{d}{100}$.	3 $\lambda \left(1 - \frac{d}{100}\right) = (c)$. $5 + \Sigma (c) = \lambda (l)$.	4 Number Living $= (l)$.	5 Number Dying.
25	1·122 ·98878	5·00000 9·99510	100,000	1,122
26	1·122 ·98878	4·99510 ·99510	98,878	1,109
27	1·122 ·98878	·99020 ·99510	97,769	1,097
28	1·122 ·98878	·98530 ·99510	96,672	1,085
29	1·118 ·98882	·98040 ·99512	95,587	1,068
30	1·132 ·98868	·97552 ·99506	94,519	1,069
31	1·163 ·98837	·97058 ·99492	93,450	1,087
32	1·211 ·98789	·96550 ·99471	92,363	1,118
33	1·276 ·98724	·96021 ·99442	91,245	1,165
34	1·288 ·98712	·95463 ·99437	90,080	1,160
35	1·352 ·98648	·94900 ·99409	88,920	1,202
36	1·468 ·98532	·94309 ·99358	87,718	1,287
37	1·636 ·98364	·93667 ·99284	86,431	1,413
38	1·856 ·98144	·92951 ·99186	85,018	1,579
39	2·486 ·97514	·92137 ·98907	83,439	2,074
40	2·989 ·97011	·91044 ·98682	81,365	2,432
41	3·366 ·96634	·89726 ·98513	78,933	2,657
42	3·615 ·96385	·88239 ·98401	76,276	2,757

VI.—*Table of Decrements—Eurasians—Contd.*

1 Age.	2 Mortality per Cent. $\}$ = (c). $1 - \frac{d}{100}$	3 $\lambda \left(1 - \frac{d}{100}\right) = (c).$ $5 + \Sigma(c) = \lambda(l).$	4 Number Living = (l).	5 Number Dying.
43	3·738 ·96262	4·86640 9·98345	73,519	2,749
44	3·123 ·96877	·84985 ·98622	70,770	2,210
45	2·687 ·97313	·83607 ·98817	68,560	1,842
46	2·430 ·97570	·82424 ·98932	66,718	1,621
47	2·352 ·97648	·81356 ·98966	65,097	1,535
48	2·453 ·97547	·80322 ·98921	63,565	1,557
49	3·581 ·96419	·79243 ·98416	62,005	2,220
50	4·464 ·95536	·77659 ·98017	59,785	2,669
51	2·954 ·97046	·75676 ·98698	57,116	1,687
52	3·044 ·96956	·74374 ·98657	55,429	1,687
53	3·140 ·96860	·73031 ·98614	53,742	1,688
54	3·241 ·96759	·71645 ·98569	52,054	1,688
55	3·350 ·96650	·70214 ·98520	50,366	1,687
56	3·466 ·96534	·68734 ·98468	48,679	1,687
57	3·590 ·96410	·67202 ·98412	46,992	1,688
58	3·724 ·96276	·65614 ·98352	45,304	1,687
59	3·868 ·96132	·63966 ·98287	43,617	1,687
60	4·024 ·95976	·62253 ·98216	41,930	1,687

VI.—*Table of Decrements—Eurasians—Contd.*

1	2	3	4	5
Age.	Mortality per Cent. $\}= (c).$ $1 - \frac{d}{100}.$	$\lambda \left(1 - \frac{d}{100}\right) = (c).$ $5 + \Sigma(c) = \lambda(l).$	Number Living $= (l)$.	Number Dying.
61	4·192 ·95808	4·60469 9·98140	40,243	1,687
62	4·322 ·95678	·58609 ·98081	38,556	1,667
63	4·518 ·95482	·56690 ·97992	36,889	1,667
64	4·673 ·95327	·54682 ·97922	35,222	1,645
65	4·902 ·95098	·52604 ·97817	33,577	1,646
66	5·155 ·94845	·50421 ·97701	31,931	1,647
67	5·435 ·94565	·48122 ·97573	30,284	1,646
68	5·747 ·94253	·45695 ·97430	28,638	1,645
69	6·098 ·93902	·43125 ·97267	26,993	1,646
70	6·494 ·93506	·40392 ·97084	25,347	1,646
71	6·944 ·93056	·37476 ·96874	23,701	1,646
72	7·463 ·92537	·34350 ·96632	22,055	1,646
73	8·065 ·91935	·30982 ·96348	20,409	1,646
74	8·772 ·91228	·27330 ·96013	18,763	1,646
75	9·615 ·90385	·23343 ·95610	17,117	1,646
76	10·239 ·89761	·18953 ·95309	15,471	1,584
77	10·815 ·89185	·14262 ·95029	13,887	1,502
78	11·296 ·88704	·09291 ·94794	12,385	1,399

VI.—*Table of Decrements—Eurasians—Contd.*

1 Age.	2 Mortality per Cent. $\}$ = (c). $1 - \frac{d}{100}$.	3 $\lambda\left(1 - \frac{d}{100}\right)$ = (c). $5 + \Sigma\,(c) = \lambda\,(l)$.	4 Number Living = (l).	5 Number Dying.
79	12·172 ·87828	4·04085 9·94363	10,986	1,337
80	13·433 ·86567	3·98448 ·93735	9,649	1,296
81	14·778 ·85222	·92183 ·93055	8,353	1,235
82	16·474 ·83526	·85238 ·92182	7,118	1,172
83	19·031 ·80969	·77420 ·90832	5,946	1,132
84	20·513 ·79487	·68252 ·90030	4,814	987
85	22·043 ·77957	·58282 ·89186	3,827	844
86	23·448 ·76552	·47468 ·88396	2,983	699
87	25·225 ·74775	·35864 ·87376	2,284	576
88	25·301 ·74699	·23240 ·87331	1,708	432
89	25·806 ·74194	3·10571 ·87037	1,276	330
90	26·087 ·73913	2·97608 ·86872	946	246
91	29·412 ·70588	·84480 ·84873	700	206
92	33·334 ·66666	·69353 ·82390	494	165
93	43·750 ·56250	·51743 ·75012	329	144
94	55·556 ·44444	·26755 ·64781	185	103
95	75·000 ·25000	1·91536 9·39794	82	61
96	100·000	·31330	21	—

On a reference to the column of decrements in the above table and in Table III preceding, it will be perceived, that owing possibly to the small number of lives under observation, there are considerable irregularities. The object was, in the construction of these tables, to give effect, as far as possible, to the actual mortality, leaving others, if necessary, to re-adjust the quantities. Between the ages 45 and 51, the following values may be interpolated in columns 4 and 5 of Tables III and VI :—

Age.	Mixed Class—Table III.		Eurasians—Table VI.	
	Living.	Dying.	Living.	Dying.
46	65,223	2,038	66,718	1,870
47	63,185	2,024	64,848	1,901
48	61,161	2,014	62,947	1,924
49	59,147	2,009	61,023	1,945
50	57,138	2,001	59,078	1,962

From age 51 inclusive, in each table, to the extremity of life, the figures are the same as those in the Northampton table. There are, so far as we are aware, no data available to enable us with any certainty to determine the mortality amongst Uncovenanted Servants and East Indians after 50, and an impression certainly exists that the latter, settled as they generally are permanently in India, do not attain individually to such advanced years as Europeans, nearly all of whom look forward to spending the evening of their days in a more temperate climate. In the absence of the necessary information, it is considered safe to adopt the Northampton table, as representing the mortality after 50.

I should mention that nearly all of the tables in this paper were computed in duplicate by native assistants in India some years ago, in fact, about the time of the Indian mutiny ; the educated Bengali, under careful supervision, being, in calculations such as the present, for accuracy and rapidity almost unrivalled.

The following table exhibits the mortality per cent. per annum amongst various classes. With the exception of columns *n* and *o*, the figures in which have reference to both males and females, all the columns refer to the mortality amongst males only ; and with the exception of columns *k* to *l*, both inclusive, and column *q*, the results are obtained from the graduated tables of decrements in each case.

VII.—*Mortality per Cent. per Annum*

a	b	c	d	e	f	g	h	i
	Uncovenanted Service Family Pension Fund.		Bengal Civil Service.		Bengal Military.			
Age.	The whole of the Subscribers. 1837-57.	Eurasian Subscribers. 1837-57.	Davies.* 1780-1838.	Neison.† 1790-1842.	Wool-house.* 1760-1837.	Davies.* 1760-1837.	Neison.§ 1800-47. Excluding Retired.	Including Retired.
20	—	—	1·18	1·18	2·66	2·64	2·23	2·19
25	1·61	1·12	1·54	1·54	2·73	2·72	2·45	2·34
30	1·40	1·13	1·69	1·69	2·91	2·89	2·75	2·62
35	1·42	1·35	1·87	1·87	3·15	3·13	2·90	2·63
40	2·81	2·99	2·09	2·16	3·44	3·43	2·89	2·55
45	2·78	2·69	2·40	2·69	3·81	3·82	3·45	2·92
50	4·63	4·46	2·84	2·61	4·26	4·26	3·39	2·23
55	—	—	3·35	2·56	4·92	4·84	3·83	2·54
60	—	—	4·02	3·26	5·92	5·52	3·96	3·03

* Dodwell and Miles' list.   † Ramchunda Doss' list.

‖ "Report of the Commissioners on the Sanitary State of the Army in India," p. 178.

The figures in columns *b* and *c* indicate the results arising out of the present inquiry. Column *d* is obtained from Mr. Davies' " Report on the Bengal Military Fund," p. 32, the mortality, from age 40 and upwards to the extremity of life, being the same as that given in the Northampton table.* Mr. Neison, after careful examination of the lists compiled by Ramchunder Doss, found the results to approximate so closely to those of Mr. Davies, given in column *d* above, that, " for the sake of comparing the results," he followed Mr. Davies' table up to age 40. From age 45 to the extreme of the table, he adopted the figures in Table XI in his " Report on the " Bengal Military Fund," and between the ages 40 and 45 the terms were interpolated.†

The results in columns *f* and *g* are obtained from tables of decrements derived from the data afforded by Dodwell's list. There is a slight difference between the figures, but this may be explained by the circumstance of Mr. Davies, while using Mr. Woolhouse's facts, having graduated a new table therefrom.‡ Columns *h* to *l* inclusive, and column *q*, have been taken for the purposes of comparison from p. 12 of the " Report on the Madras Military Fund," by Mr. Samuel Brown, the late Mr. P. Hardy, and Colonel J.

* Davies' " Report on the Bengal Civil Fund," p. 11.
† Neison's " Report on the Bengal Civil Fund," p. 15.
‡ " Assurance Magazine," vol. xi, p. 5.

amongst Various Classes.

k	l	m	n	o	p	q	a
Madras Military. (Madras Fund.)		European Non-commissioned Officers and Men in India. Dr. Farr.‖ 1847-56.	Assured Lives.		Retired Officers of the Indian Army. Christie.¶	English Life Table, Males. Dr. Farr. 1841.	Age.
Davies.‡ 1808-40.	S. Brown.§ 1808-57.		India. Experience of Oriental and Laudable Insurance Companies. Francis. 1815-47.	England. Committee of Actuaries.			
2·72	3·26	5·64	2·47	·73	—	·92	20
3·06	3·16	4·88	2·72	·78	1·10	·99	25
3·66	3·20	4·96	3·04	·84	1·17	·96	30
3·70	2·94	5·14	3·53	·93	1·29	1·24	35
4·05	2·80	6·16	4·21	1·04	1·47	1·21	40
4·14	2·68	5·74	4·86	1·22	1·77	1·70	45
3·74	2·75	5·61	5·46	1·59	2·23	1:85	50
4·09	3·06	5·47	5·90	2·17	2·86	2·86	55
5·73	2·75	5·46	6·47	3·03	3·66	3·40	60

‡ Colonel de Havilland's data.   § Patronage Books of the India House.
¶ *Journal of the Statistical Society,* vol. i, p. 279, &c., &c.

T. Smith; and we are indebted for the figures in column *m* to Dr. Farr.

The figures in columns *n* and *o* have reference to *policies* of assurances, and not *lives.* Those in *o* are obtained from what are known as the "Experience Tables," exhibiting the rate of deaths according to the combined town and country experience (excluding Irish), comprised in 62,537 assurances.

It is impossible to conclude this paper without a word of congratulation on the important fact that the most recent investigation into the mortality of European military officers in India confirms the conclusions arrived at by Mr. Neison in his reports on the Bengal Civil and Military Funds, and is fully in accordance with impressions which have long prevailed, " that the high rate of mortality " which formerly occurred in India was due to preventible causes, " and that a great change for the better, owing to improvement in " habits or better sanitary regulations, has for many years been " going on." The "Report on the Madras Military Fund," by Mr. Samuel Brown and his colleagues Mr. Peter Hardy and Colonel Smith, recently published, is perhaps the most important treatise upon this deeply interesting subject which has yet appeared. Exception has always been taken to the investigations by Mr. Woolhouse, Mr. Davies, and others, on the ground that their facts were obtained from Dodwell and Miles' lists. Mr. Brown's observations

embrace 5,000 names, and extend over a period of fifty years, from 1808 to 1857; and the whole of the lists originally furnished by Colonel Smith were carefully compared and checked with the patronage books by the authorities at the India House. Moreover, the whole period of fifty years was subdivided into five consecutive decennial periods, and the result is as above. The improvement is said to be " most marked at the younger ages, and progressive at all " ages in which the facts are sufficiently numerous to allow of an " average result being calculated."

But I need not allude further to Mr. Brown's remarkable report, which is no doubt familiar to many of my hearers.

It is distressing to turn from Mr. Brown's report, to the " Report " of the Commissioners appointed to inquire into the Sanitary State " of the Army in India," and mark the frightful disparity between the mortality in India of European commissioned officers and European non-commissioned officers and men as exhibited by columns l and m respectively of the preceding table. The question, as is well known to many of my hearers, is one of imperial importance, and its solution a matter of urgent necessity. For while, on the one hand, we are assured that British empire in India will be seriously imperilled by any reduction of the permanent European force below 73,000 men, Sir A. Tulloch and others " very much question whether, " with the mortality rate of the last forty years, it will be possible " for England to keep up an army of 73,000 men in India." It is a matter therefore of almost personal importance to every Englishman living, that immediate effect be given to the recommendations of the Sanitary Commission, and every human means adopted for checking this terrible mortality.

The report of the Commissioners concludes with the recommendation that a system of registering deaths, and the causes thereof, be established in the large cities of India, so as to determine the effect of local causes on the native and European population. Antecedent to this, however, it would be necessary to ascertain the population of the presidency towns. That of Calcutta, the metropolis and seat of the Government, has as yet only been rudely approximated to. The Municipal Commissioners, in their report for 1859-60, say that " they have not been able to devise any plan by " which the real extent of the European population can be ascer-" tained with anything approaching to accuracy." Captain Birch attempted a census in 1837, which assigned the entire population at 229,714 souls; and again in 1843, when it was found that the native population was rather less than in 1837.* The results for 1837 were analysed by Colonel Sykes.† The population has recently been

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* Dr. Stewart's " Report on Small Pox in Calcutta."
† *Statistical Journal*, vol. viii, p. 50.

returned at 413,182, independently of the suburbs. Curiously enough, while there are no means of approximating accurately to the population of Calcutta, there is a careful registry of the deaths amongst the natives. This record of native deaths has been kept by the police authorities at the different ghats and gharastans, where alone the funeral rites of cremation and interment are permitted to the Hindoo and Mussulman inhabitants, since the beginning of the present century. I can recollect, while residing in Calcutta, making an application through a friend to the chief magistrate, for permission to examine these records. The result would have moderated the ardour of the most enthusiastic statist, for in a few days there appeared about a dozen of coolies carrying bags so numerous that eventually they filled a considerable space in a pretty large apartment. These contained the records of the native deaths in Calcutta from 1802, and were written in Bengalee, detailing the name, age, sex, caste, residence, occupation, disease, duration of sickness, &c., of each individual deceased. So minute were the particulars, in fact, that the cost of the wood required to burn each body was faithfully narrated.

Little can be done for Calcutta in sanitary respects until a thorough reform has been effected in the manners and customs of the natives. It is a reproach to public decency, that there are at present about 6,000 bodies burnt yearly within the precincts of the city of palaces, and from 5,000 to 6,000 thrown into the river. The river as it ebbs and flows carries to and fro, in every stage of decomposition, the loathsome burden committed to its care. Permanently on the staff of every European *ménage* of consequence located on the banks, there is a native servant called—if I recollect rightly—a *dome*, whose special province it is, with a long pole, to keep the floating bodies at a reasonable distance from the residence of the sahib, and prevent the foul effluvium coming between the wind and his nobility. No wonder that in Calcutta even now, during the hot and rainy season, when cholera stalks abroad, it occasionally happens that you bury your friend, instead of dining with him as you expected the evening before.

Some of my hearers, interested in India, will no doubt have noticed that an attempt was very recently made by the Government of India to abolish the system which has so long prevailed in Calcutta of burning the dead within the precincts of the city. The attempt has, I believe, failed, and the authorities have been compelled to yield to the religious sentiments of the natives. "The " ghats are to remain where they are, but chemical means, we are " told, are to be taken to do away with the noxious gases."

It was my intention to have furnished on this occasion a few original statistics of the mortality of Eurasian females, and also

certain particulars touching the mortality amongst the burgher
population of Ceylon.   These must be reserved for another occasion.
The Dutch burghers fill much the same place in society in Ceylon
as the Eurasians do in India.   Descendants of the original Dutch
settlers, by intermarriages with the natives, are to be found, says
Sir Emerson Tennent, " in every administrative establishment in
" Ceylon, from the department of the Colonial Secretary to the
" humblest police court."*

* " Ceylon," vol. iii, p. 156.